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Cardiovascular Medicine

Title

Lower Mortality In Tricuspid Valve EndocarditisPatients Who Inject Drugs

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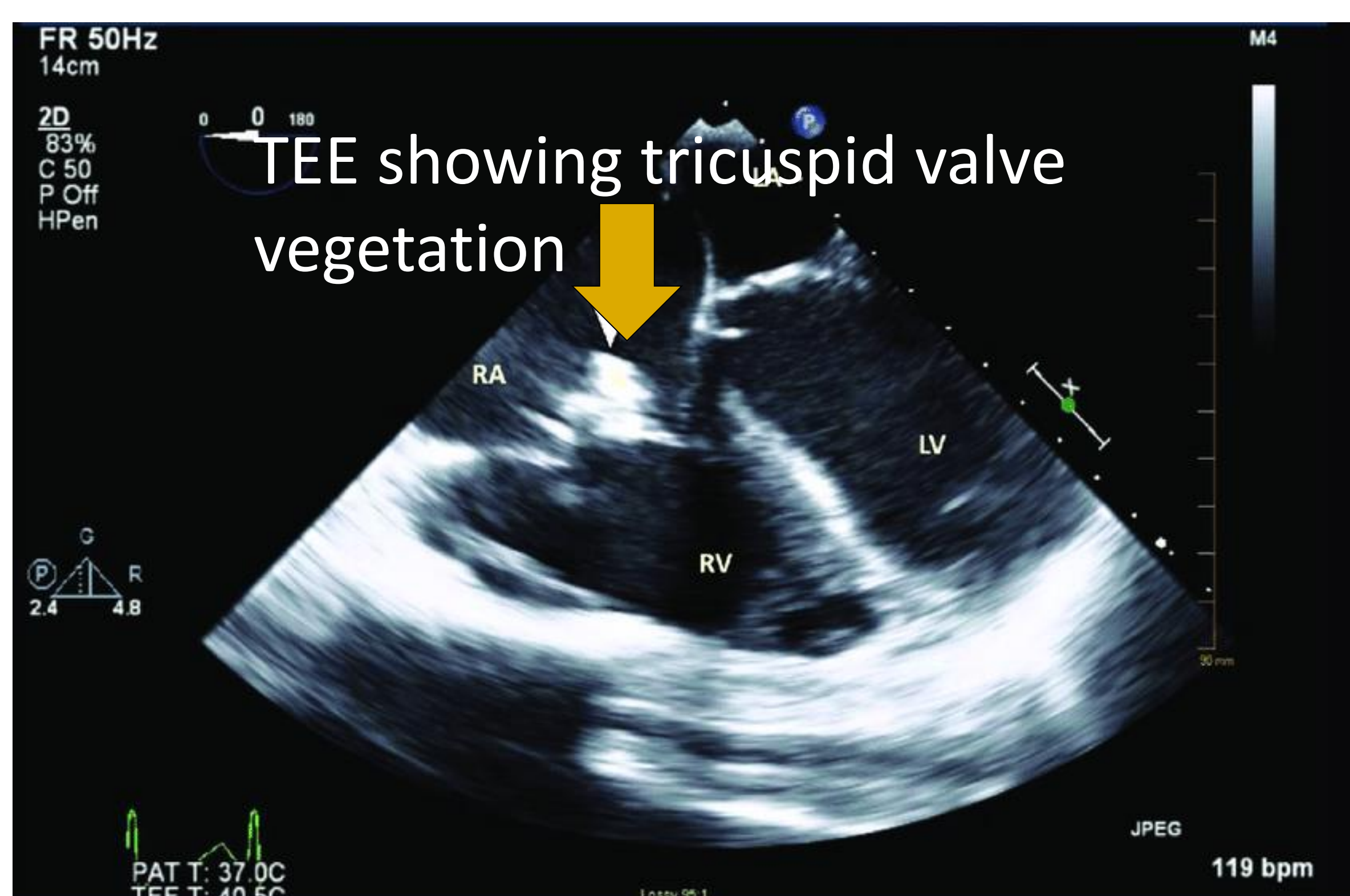
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Background

A disproportionate number of tricuspid valve endocarditis (TVE) patients are also patients who inject drugs (PWID). For PWID, studies have shown prolonged hospitalization, higher readmission, and increased complications, but lower mortality than TVE patients who do not inject drugs (PWNID). Studies have also shown that implementing outpatient parenteral antibiotics (OPAT) protocols for PWID has similar complication rates as for PWNID and decreases length of stay and readmission rates.

Design

We performed a retrospective chart review of TVE PWID vs PWNID diagnosed by TTE/TEE at the University of California Davis Medical Center from Jan 1, 2013 to May 1, 2023 to compare potential differences in characteristics, treatments and outcomes. Statistical analysis included: Pearson's Chi-squared test; Fisher's exact test; Wilcoxon rank sum exact test; Wilcoxon rank sum test; False discovery rate correction



Results

Table 1. Selected Outcomes & Characteristics of the Cohort				
Variables	PWID N = 20	PWNID N = 15	p-value	q-value
Mortality – no. (%)				
Total deceased	4 (20)	12 (80)	<0.001	0.018
Deceased during hospitalization	1 (5)	6 (40)	0.026	0.257
Mean age at admission – years.	35.15	46.88	0.064	0.370
Readmissions – no. (%)				
Mean readmissions	12 (60)	8 (53)	0.003	0.058
Mean endocarditis-related readmissions	10 (83.3)	4 (50)	0.330	0.859
Median length of stay - days	28.9	16.6	0.368	0.859
Premature departure – no. (%)	5 (25)	0 (0)	0.057	0.370
Given outpatient parenteral antibiotics – no. (%)	4 (44)	0 (0)	0.491	0.879
Recurrent infection	12 (60)	4 (27)	0.050	0.370
Etiology of TVE – no. (%)				
Chart Specified Injection Drug Use	16 (80)	0 (0.0)	<0.001	<0.001
NBTE or structural anomaly	0 (0)	4 (27)	0.026	0.257
Unhoused at admission or history of housing instability	13 (65)	1(6.7)	0.003	0.058
Surgery completed – no. (%)	12 (60)	4 (27)	0.050	0.370

Summary

Pre-false discovery rate PWID showed:

Lower rates:

- Overall mortality
- In-hospital mortality

Higher rates:

- Readmission
- Recurrent infection
- Surgery
- Housing instability

Not statistically significant:

- Length of stay
- Premature departure
- Age at admission
- Receiving outpatient parenteral antibiotics

Additional findings:

- One fifth of PWID charts did not specify injection drug use as etiology (e.g. abscess, line infection, trauma, prosthetic/device-related)

Discussion

- Findings align with prior research showing lower mortality for TVE PWID
- Higher rate of readmission and being unhoused for PWID were nearly statistically significant
- Our study did not find a significant difference in age, contrasting prior studies that suggest lower mortality rates may be due to a younger cohort; however, we found that PWNID often had other serious comorbidities.
- PWID did not show significant increased length of stay, possibly due to premature departures; however, this variable was also not significantly different
- Differences in OPAT were not significant
- Notably, sample size may have been prohibitive.

Future Studies

UC Davis does not have a 'no OPAT/PICC line policy' for PWID. Further study with larger sample size could:

- Evaluate how OPAT is utilized for PWID, and compare outcomes within-group
- Clarify reasons for readmission, and circumstances predisposing to premature departure